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ABSTRACT

This conference paper describes demographics of the Native American population, their disability rate, and their utilization of rehabilitation services. Findings indicate that: (1) in 1980, almost half of the American Indian population was under 20 years of age and that the birthrate among American Indians was twice that of other groups; (2) in 1980, over half of American Indian households on reservations had no telephone, while 20 percent of households had no transportation, and 16 percent lacked electricity; (3) the level of educational attainment was significantly lower than the general population; (4) the death rate among American Indians was 1.5 times or more the death rate for all races; (5) sensory impairments, identified as eye and ear conditions, were disproportionately high among American Indians; (6) American Indians exhibited health-related problems at earlier ages than individuals from the general U.S. population; (7) for American Indian children with disabilities, the largest group of problems were learning disabilities; (8) American Indian rehabilitation clients had a greater number of dependents, less income, and a lower educational level than other clients; and (9) significantly more American Indians were treated for alcohol and drug abuse in the rehabilitative system of services than was the general population. Charts illustrate statistical findings. (CR)

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**Research to Practice:** **Using Research in Native American Communities to Improve Policies and Practices Related to Educating Adolescents Who are Disabled**

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Paper presented at the 1988 Annual Meeting of the American Educational Research Association, New Orleans, Louisiana, April 5-9, 1988

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EC 306736

**Research to practice: Using research in American Indian communities to improve policy and practices related to educating individuals who are disabled**

*Joanne C. O'Connell, Ph.D.*

The Northern Arizona University Native American Research and Training Center, in Flagstaff, Arizona, was established in order to conduct culturally relevant research and training that will influence the development of effective rehabilitation services for American Indians who are disabled. The Center was designed with the philosophy that American Indian people, including individuals who are disabled, should be involved in all facets of the Center operation. Over the past five years, we have been able to translate this philosophy into meaningful strategies for working *with* American Indian people in order to identify and utilize research findings that are most meaningful to them. In addition to Center faculty and staff, American Indian professionals, policy-makers, and service providers are actively sought and identified to participate in the design, implementation, interpretation, and dissemination of Center activities.

The Center has recently completed a national study of the needs of American Indian people who are disabled, which was subsequently submitted to the U.S. Congress. In addition, numerous studies have been conducted by Center faculty. There findings will be summarized today.

I'd like to first of all present you with a national picture of American Indian people. One psychologist (Richardson, 1978) stated that no two cultures differ more in value systems than the American Indian and the White dominant culture. In addition to the cultural differences, the population characteristics of American Indian people distinguish them from the general population at large. The 1980 U S. Census reported 1.4 million American Indians in the United States. The American Indian population has nearly tripled in the twenty year period from 1960 to 1980.

The majority of the Native American population live west of the Mississippi River. The population has shifted in the last decade such that 54% of American Indians live in or near urban centers. One-half of the American Indian population reside in five states: California, Oklahoma, Arizona, New Mexico, and North Carolina. Nearly half (49%) of all reservation residents live on ten reservations: Navajo (AZ), Pine Ridge (SD), Gila River (AZ), Tohona O'odham (AZ), Fort Apache (AZ), Hopi (AZ), Zuni (NM), San Carlos (AZ), Rosebud Sioux (SD), and Blackfeet (MT). Native Americans are the only ethnic group where almost half of the population reside in rural areas.

**Insert Figure 1**

Most educators are aware of research showing that certain socioeconomic and demographic characteristics are strong predictors of educational and rehabilitation outcomes. In regard to these features, the American Indian population differs markedly from the general population.

In 1980 almost half of the Indian population was under 20 years of age, and 5% were 65 years and older; compared to 32% and 12%, respectively, for the total U.S. population. The median age of American Indians is 24.4 years, the lowest of any population group, while the birthrate among American Indians is twice that of other groups. The average American Indian family size is 4.6 members.

Over half of American Indian households on reservations had no telephone in 1980, while 20% of the households had no transportation, 16% lacked electricity, 17% lacked refrigeration, 42% lacked central heat, and 21% lacked indoor toilets. These conditions suggest a higher potential health risk in two ways. First, a higher risk for disease and poor health conditions associated with lack of plumbing, heat, untreated water supply, and untreated sewage are suggested and, secondly, a lack of access to health and social services exists.

The level of educational attainment is significantly lower than that identified for the general population. Only 56% of American Indians over the age of 25 have graduated from high school (U.S. Bureau of the Census, 1983). Dr. William Martin, Jr., a Center researcher, has shown that tested reading levels of a sample of rehabilitation clients is significantly below the academic grade levels American Indian clients have completed.

The economic status of American Indians, particularly those living on reservations, is among the lowest of any group in the United States. The economic base on and near reservations is generally small or nonexistent.

These statistics tend to paint a very bleak picture of the future of Indian children. Indeed, they do suggest a socioeconomic status and educational disadvantage that place them at risk for failing in our traditional educational system.

There are, however, some very positive efforts that are occurring within Indian communities that represent attempts to identify information and strategies to improve educational efforts for American Indian students. The Northern Arizona University Research and Training Center is particularly concerned with the vocational training needs of Indian students who are disabled.

**Disability status of American Indians**

As a part of the national study we recently completed, Dr. Jim Morgan conducted an analysis of the disease conditions of American Indians as they may suggest future rehabilitation needs. He analyzed hospitalization data from the Indian Health Service (IHS) and compared the data to the National Short Stay Hospitalization survey data conducted by the U.S. Bureau of Health Statistics (1986). This allowed results from the IHS data to be compared to general population conditions across the various disease categories. The International Classification of Diseases (ICD) categories were used for descriptively organizing the data.

Dr. Morgan reported that the death rate among American Indians was 1.5 or more times the death rate for all races. Alarmingly, the death rate for American Indians between the ages of 15 through 44 years is nearly double that rate. American Indians between the ages of 15 through 34 years are over 11 times more likely to die due to alcoholism, and 3 times more likely to die due to accidents.

**Insert Figure 2 & 3**

Figure 2 shows the leading causes of death among American Indians and the ratio of American Indians to All Races death rate. Figure 3 shows the major causes of death by age category.

A number of the disease categories showed American Indians to be disproportionately overrepresented when compared to the hospitalization rate for All Races in these categories. Sensory impairments, identified as eye and ear conditions, are

disproportionately high. Congenital conditions of the eye for American Indians were 1.26 times that of the U.S. All Races rate, while American Indians were 2.89 times more likely to be hospitalized for conditions of the ear. Otitis media hospitalization rates were 4.02 times greater than that for the U.S. All Races rate.

The hospitalization rate for diabetes mellitus likely to result in a disabling condition was 2.8 times greater for American Indians than the U.S. population. Other conditions that suggested a greater than average rate of hospitalization were meningitis, quadriplegia, skull fractures, and complications of pregnancy, to name a few.

**Insert Table 1**

American Indians exhibited health-related problems at earlier ages than individuals from the general U.S. population, with the highest relative rates reported for the age group 15 through 35 years. Additionally, health problems varied greatly across regions of the country and even within regions, resulting in very different patterns of disability across the U.S. for American Indians.

For example, within the state of Arizona alone, the rate of diabetes is highly variable. American Indians in the Tucson area experience a rate of diabetes that is 8 times greater than that in the general population, while the rate for Navajos is 3 times higher. This variability challenges the rehabilitation service delivery system to develop and deliver rehabilitation programs that meet the needs of individuals who reside within tribal systems that are highly variable.

Dr. Cleb Maddux studied American Indian participation in special education programs across the country. Maddux reported that only 10% of all American Indian children now attend schools operated by the Bureau of Indian Affairs. He reported that American Indians have the second highest percentage of students with handicapping conditions among minority groups in public schools, with 10% of the school age population identified as handicapped. The following figure shows the percentage of special education students for 5 ethnic categories by handicapping condition.

**Insert Figure 4**

Problems related to learning disabilities represented the largest group of handicapped students. A larger percentage of American Indian children were also found in the speech impairment and multi-handicapped categories than the respective percentages for the U.S. population.

**Insert Figure 5**

**Utilization of rehabilitation services**

The final national analysis I would like to share with you is a study conducted by Morgan and O'Connell (1987) of the utilization of rehabilitation services by American Indians. Client data for fiscal years 1980-82 was obtained from the Rehabilitation Services Administration. The data source provided a variety of demographic and disability data as well as detailed information on the nature of the rehabilitation services provided. All cases in which the client was not accepted into the agency's caseload or where the client's race was not known were removed. Subsequently, all the remaining cases for American Indian clients and a random two percent sample of the remaining cases for all other races were selected for the analysis presented here.

In the analysis, mean values for quantitative variables and percentage rates for nominal items were tabulated for American Indians and for the general population sample and these values were contrasted across the two groups. T-tests and Chi-Square tests were performed on quantitative and nominal data, respectively, to evaluate the statistical significance of differences between the two samples.

First of all, consistent with some of the other data I've reported, we did find that the American Indian rehabilitation clients had a greater number of dependents, were less likely to have earnings at the time of referral, were more likely to be receiving public assistance at time of referral, and have a lower educational level.

On the other hand, despite the fact that American Indians are more likely to be younger than the general population, the young American Indian with a disability is not successfully entering the rehabilitation system of services. This has significant implications for the need to improve policies and practices related to serving adolescent Indians who are handicapped and will be entering the world of work. In assessing the prevalence of American Indian disabilities for those clients served in RSA, it was apparent that significantly more American Indians were treated for alcohol and drug abuse than was evident for the general population. The high prevalence of alcoholism identified in the RSA caseload is consistent with the IHS data, although there is significant variation from state to state regarding policies in serving individuals with chemical dependency.

Dr. Morgan compared the service ratios of the IHS and RSA data across the categories of major disabling conditions. A ratio greater than one indicates a disproportionate percentage of American Indian clients in the specified disability category. The ratios in the following table indicate substantially lower service ratios by RSA for most sensory disorders. RSA's service ratio for orthopedic conditions is slightly higher over all than that for the IHS hospitalization data. However, the service ratio for orthopedic impairments due to accidents is substantially lower for RSA. The service ratios for psychological disorders cannot be meaningfully compared due to the high disparity in the absolute importance of this category between the two data sets. Psychological disorders made up over 40 percent of all RSA cases, and less than 7 percent of IHS diagnoses. The largest subcategory in this section is represented by alcohol dependency.

**Insert Table 2**

Finally, the number one reason for case closure in the RSA system was "unable to locate" the client. "Failure to cooperate" was the second highest documented reason for case closure.

**Summary**

These data were presented to provide you with a broad overview of American Indians and issues affecting their disability status and challenges to effective education and training. The challenge to policy-makers and educators is to understand and incorporate traditional, cultural values and beliefs into effective service practices.

**Table 1**

**Percentage Distribution of Diagnosis by Disease Type for IHS Versus All U.S. Short Stay Hospitals**

| | % of All Diagnoses | | |
|---|---|---|---|
| | (A) IHS | (B) U.S. | Ratio A/B |
| Infectious and Parasitic Diseases | 3.46% | 2.28% | 1.52 |
| Ill-defined Intestinal Infection | .22% | .03% | 7.23 |
| Tuberculosis: | .22% | .05% | 4.01 |
| Likely Disabling | .05% | .02% | 2.66 |
| Neoplasms: | 1.91% | 5.27% | .36 |
| Malignant: | 1.44% | 4.15% | .35 |
| Lung | .16% | .59% | .27 |
| Breast | .10% | .31% | .31 |
| Leukemia | .05% | .12% | .42 |
| Endocrine, Nutritional, and Metabolic Diseases | 7.16% | 6.53% | 1.10 |
| Diabetes Mellitus: | 4.20% | 2.81% | 1.49 |
| Likely Disabling | .46% | .17% | 2.79 |
| Other Endocrine Condition | .14% | .16% | .88 |
| Malnutrition | .10% | .16% | .63 |
| Gout | .01% | .04% | .35 |
| Cystic Fibrosis | .01% | .02% | .55 |
| Diseases of the Blood and Blood Forming Organs | 1.98% | 2.03% | .98 |
| Anemias | 1.55% | 1.56% | .99 |
| Mental Disorders: | 6.55% | 4.87% | 1.34 |
| Psychoses | .56% | 1.20% | .46 |
| Neurotic Personality Disorders | 60% | .87% | .70 |
| Alcohol Dependence or Psychosis | 3.62% | 1.10% | 3.28 |
| Drug Dependence or Psychosis | .08% | .23% | .35 |
| Mental Retardation | .08% | .09% | .89 |

**Table 1 (Continued)**

**Percentage Distribution of Diagnosis by Disease Type for IHS Versus All U.S. Short Stay Hospitals**

| | % of All Diagnoses | | |
|---|---|---|---|
| | (A) IHS | (B) U.S. | Ratio A/B |
| Diseases of the Nervous System: | 1.33% | 2.06% | .64 |
| Meningitis | .13% | .05% | 2.59 |
| Multiple Sclerosis | .01% | .06% | .16 |
| Hemiplegia | .13% | .30% | .45 |
| Cerebral Palsy | .04% | .04% | .93 |
| Paralysis: | .20% | .19% | 1.05 |
| Quadriplegia | .06% | .03% | 2.00 |
| Lower Limb(s) | .08% | .05% | 1.71 |
| Upper Limb(s) | .00% | .01% | .59 |
| Epilepsy | .20% | .19% | 1.02 |
| Muscular Dystrophy | .02% | .06% | .38 |
| Eye Conditions: | 1.23% | .98% | 1.26 |
| Diabetic Retinopathy | .08% | .07% | 1.25 |
| Glaucoma | .08% | .10% | .84 |
| Cataract | .33% | .27% | 1.22 |
| Blindness or Low Vision: | .06% | .06% | 1.02 |
| Both Eyes | .04% | .05% | .93 |
| Ear Conditions: | 2.15% | .74% | 2.89 |
| Otitis Media | 1.63% | .41% | 4.02 |
| Hearing Loss | .16% | .07% | 2.35 |
| Diseases of the Circulatory System: | 7.69% | 20.41% | .38 |
| Rheumatic Heart Disease | .20% | .18% | 1.10 |
| Hypertensive Heart Disease | 1.71% | 3.26% | .52 |
| Ischemic Heart Disease: | 1.61% | 6.11% | .26 |
| Acute Myocardial Infarction | .40% | .97% | .41 |
| Atherosclerotic Heart Disease | .30% | 1.83% | .16 |
| Congestive Heart Failure | 1.05% | 1.74% | .60 |
| Other | 1.58% | 4.56% | .35 |
| Cerebrovascular Disease: | .66% | 2.05% | .32 |
| Cerebral Seizure (Stroke) | .23% | .42% | .55 |
| Diseases of the Respiratory System: | 7.97% | 8.03% | .99 |

. Table 1 (Continued)

**Percentage Distribution of Diagnosis by Disease Type for IHS Versus All U.S. Short Stay Hospitals**

| | % of All Diagnoses | | |
|---|---|---|---|
| | (A) IHS | (B) U.S. | Ratio A/B |
| Chronic Obstructive Pulmonary Diseases: | 2.01% | 2.97% | .68 |
| Bronchitis | .41% | .54% | .75 |
| Emphysema | .04% | .20% | .19 |
| Asthma | .90% | .83% | 1.09 |
| Bronchiectasis | .08% | .04% | 1.82 |
| Other Likely Disabling: Respiratory Diseases | .98% | 1.48% | .66 |
| Diseases of the Digestive System: | 8.29% | 8.74% | .95 |
| Dental Disorders: | .30% | .21% | 1.45 |
| Likely Disabling | .02% | .06% | .35 |
| Ulcers (Stomach & Sm. Intest.) | .30% | .59% | .51 |
| Hernia (with Gangrene) | .01% | .05% | .32 |
| Noninfectious Entritis and Colitis | 1.02% | .84% | 1.21 |
| Alcoholic Liver Damage | .59% | .17% | 3.56 |
| Other Likely Disabling | 1.18% | 1.54% | .77 |
| Diseases of Genito-Urinary System: | 5.99% | 7.83% | .77 |
| Renal Failure | .60% | .50% | 1.20 |
| Complications of Pregnancy, Childbirth and the Puerperium: | 18.29% | 7.37% | 2.48 |
| Hypertension Complicating Preg. | 1.13% | .28% | 3.98 |
| Diseases of the Skin and Subcutaneous Tissue | 2.45% | 1.40% | 1.76 |
| Diseases of the Musculoskeletal System and Connective Tissue | 2.70% | 5.26% | .51 |
| Arthropathies and Related Disorders: | 1.22% | 1.61% | .76 |
| Osteoarthritis | .27% | .74% | .37 |
| Dorsopathies (Disords. of Back) | .45% | 1.70% | .26 |
| Rheumatism (Excluding the Back) | .37% | .76% | .49 |

**Table 1 (Continued)**

**Percentage Distribution of Diagnosis by Disease Type for IHS Versus All U.S. Short Stay Hospitals**

| | % of All Diagnoses (A) IHS | (B) U.S. | Ratio A/B |
|---|---|---|---|
| Congenital Anomalies | 1.12% | .91% | 1.23 |
| Nervous System: | .07% | .05% | 1.23 |
| Spina Bifida | .01% | .02% | .77 |
| Hydrocephalus | .04% | .02% | 2.04 |
| Eye | .02% | .01% | 2.03 |
| Ear | .05% | .02% | 2.17 |
| Cleft Palate-Cleft Lip & Deformities of the Tongue | .06% | .04% | 1.70 |
| Musculoskeletal Deformities: | .22% | .20% | 1.10 |
| Spinal | .03% | .06% | .47 |
| Downs Syndrome & Other Chromosomal Anomalies | .06% | .03% | 2.08 |
| Conditions Originating in the Perinatal Period: | 4.16% | 2.45% | 1.70 |
| Low Birthweight | .46% | .30% | 1.50 |
| Birth Asphyxia & Respiratory Distress | .34% | .26% | 1.31 |
| Symptoms, Signs, & Ill Defined Conditions | 5.81% | 5.84% | .99 |
| Injury and Poisoning: | 9.77% | 7.00% | 1.40 |
| Skull Fracture | .42% | .24% | 1.74 |
| Spinal Cord Fracture | .14% | .13% | 1.05 |
| Dislocation of Vertabrae | .01% | .02% | .31 |
| Sprains & Strains of Back (Including Neck) | .14% | .45% | .32 |
| Intracranial Injuries (Except Skull Fracture) | .56% | .39% | 1.41 |
| Traumatic Amputation of Limbs or Digits | .03% | .03% | .86 |
| Late Effect of Injuries | .13% | .15% | .88 |
| Injury to Nerves & Spinal Column | .10% | .08% | 1.28 |
| TOTAL | 100.00% | 100.00% | 1.00 |

Source: O'Connell, J. C. (Ed.) (1987). A study of the special problems and needs of American Indians with handicaps both on and off the reservation. Washington, DC. U.S. Department of Education, Rehabilitation Services Administration.

**Table 2**

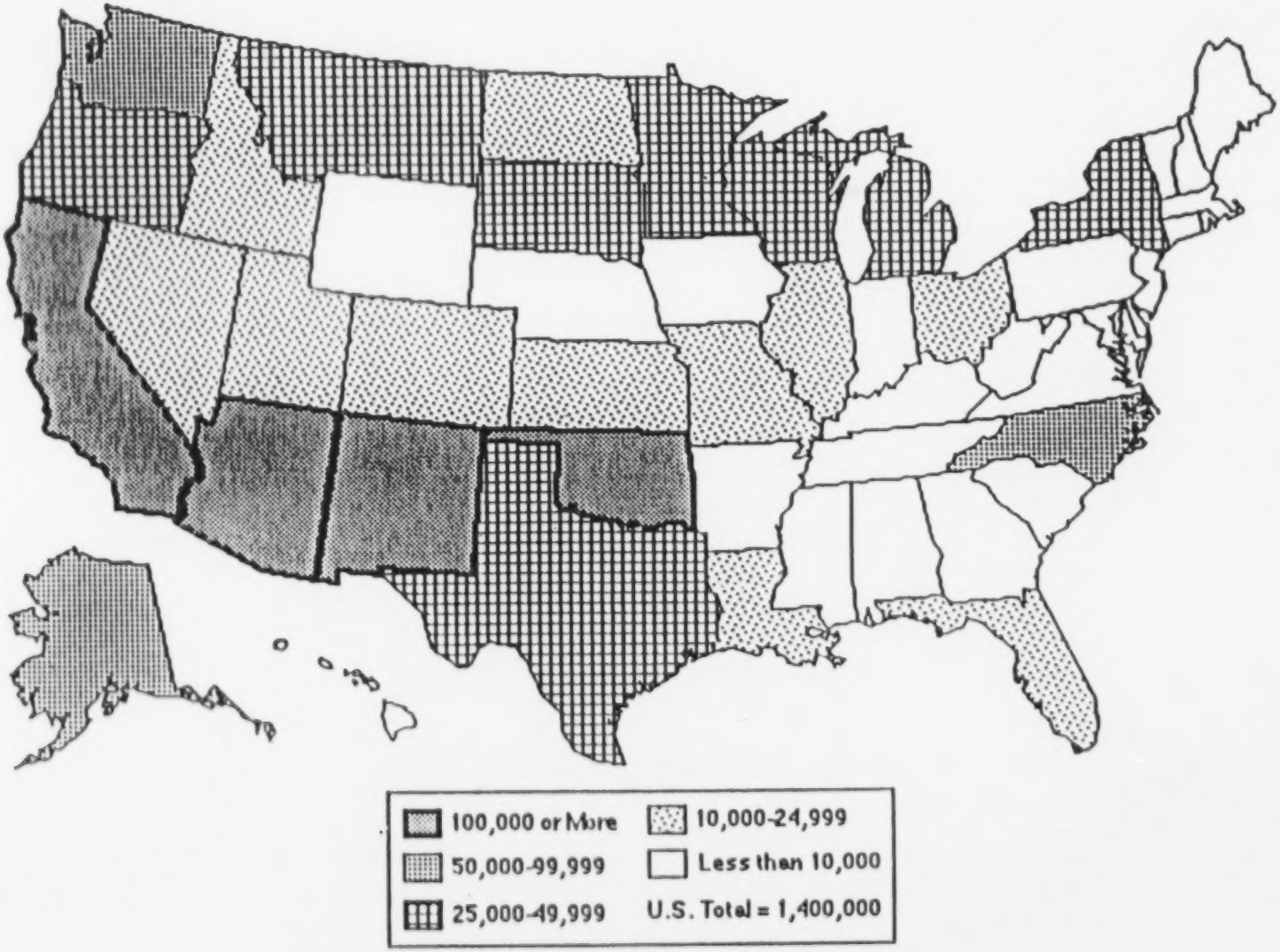
**Distribution of Accepted RSA Cases by Disability Type for American Indians Versus All Clients**

| | Percent of Accepted Cases (A) A.I. | (B) U.S. | Ratio A/B |
|---|---|---|---|
| Conditions of the Eye | 6.26% | 7.64% | .82 |
| Cataract | 1.01% | 1.27% | .79 |
| Glaucoma | .33% | .46% | .73 |
| Other Disease | 2.26% | 2.98% | .76 |
| Congenital | .85% | 1.22% | .70 |
| Accident-Other | 1.81% | 1.72% | 1.05 |
| Conditions of the Ear | 3.41% | 4.32% | .79 |
| Disease | 1.09% | 1.49% | .74 |
| Congenital | .77% | 1.13% | .68 |
| Accident-Other | 1.54% | 1.70% | .90 |
| Orthopedic Conditions | 24.31% | 25.76% | .94 |
| Cerebral Palsy | .52% | .99% | .52 |
| Congenital | 1.46% | 1.98% | .74 |
| Arthritis | 2.66% | 2.17% | 1.22 |
| Stroke | .60% | .83% | .72 |
| Other Diseases & Degenerative Conditions | 2.50% | 3.61% | .69 |
| Spinal Chord | 2.36% | 2.00% | 1.18 |
| Accident-Other | 14.22% | 14.18% | 1.00 |
| Psychological Disorders | 48.29% | 41.65% | 1.16 |
| Psychotic Conditions | 4.15% | 7.52% | .55 |
| Psychoneurotic Conditions | 5.20% | 8.11% | .64 |
| Alcohol Abuse | 19.35% | 5.80% | 3.34 |
| Drug Abuse | 1.52% | 1.54% | .99 |
| Other Character Disorders | 9.45% | 7.84% | 1.21 |
| Mental Retardation | 8.60% | 10.84% | .79 |
| Other Disabling Conditions | 16.34% | 19.15% | .85 |
| Cancer | .70% | .87% | .80 |
| Asthma & Allergies | .53% | 1.01% | .53 |
| Diabetes Mellitus and Other Endocrine Cond. | 1.59% | 2.00% | .79 |
| Blood Conditions | .30% | .42% | .70 |
| Epilepsy | 2.10% | 2.20% | .96 |
| Other Nervous System | .81% | 1.17% | .69 |
| Heart and Circulatory Conditions | 2.52% | 3.98% | .63 |
| Respiratory Conditions | .69% | .91% | .76 |
| Dental Conditions | 2.89% | 1.72% | 1.68 |
| Digestive Conditions | 1.43% | 1.75% | .81 |
| Genito-Urinary Conditions | 1.73% | 2.00% | .87 |
| Renal Failure | .42% | .20% | 2.06 |
| Speech Impairments | .39% | .52% | .75 |
| Skin Conditions | .25% | .40% | .62 |

Source: O'Connell, J. C. (Ed.) (1987). A study of the special problems and needs of American Indians with handicaps both on and off the reservation. Washington, D.C., U.S. Department of Education, Rehabilitation Services Administration.

FIGURE 1

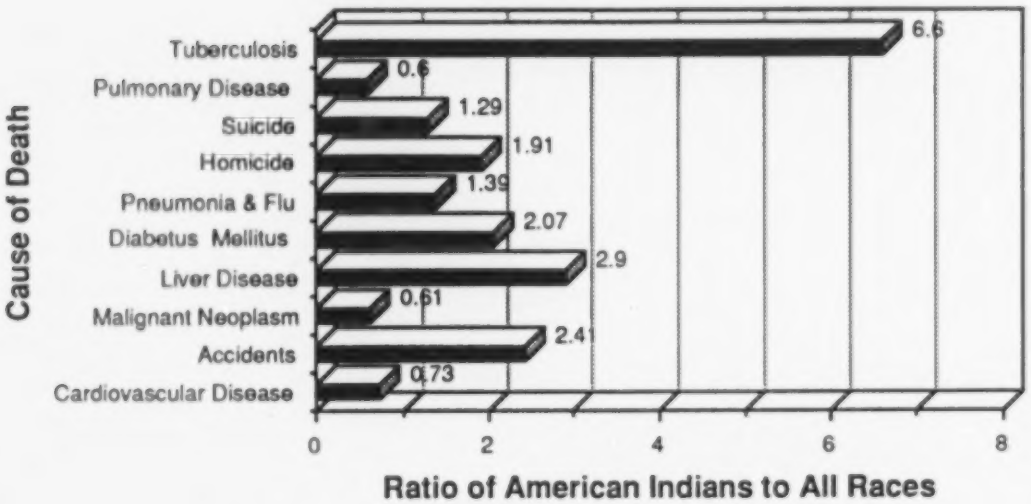
## Number of Native Americans by State, 1980




Source: Plantz, M.G., & Stinson, F. S. (1986). Indian People in Indian lands 1980. U.S. Department of Health & Human Services, p. 6.

**Figure 2**

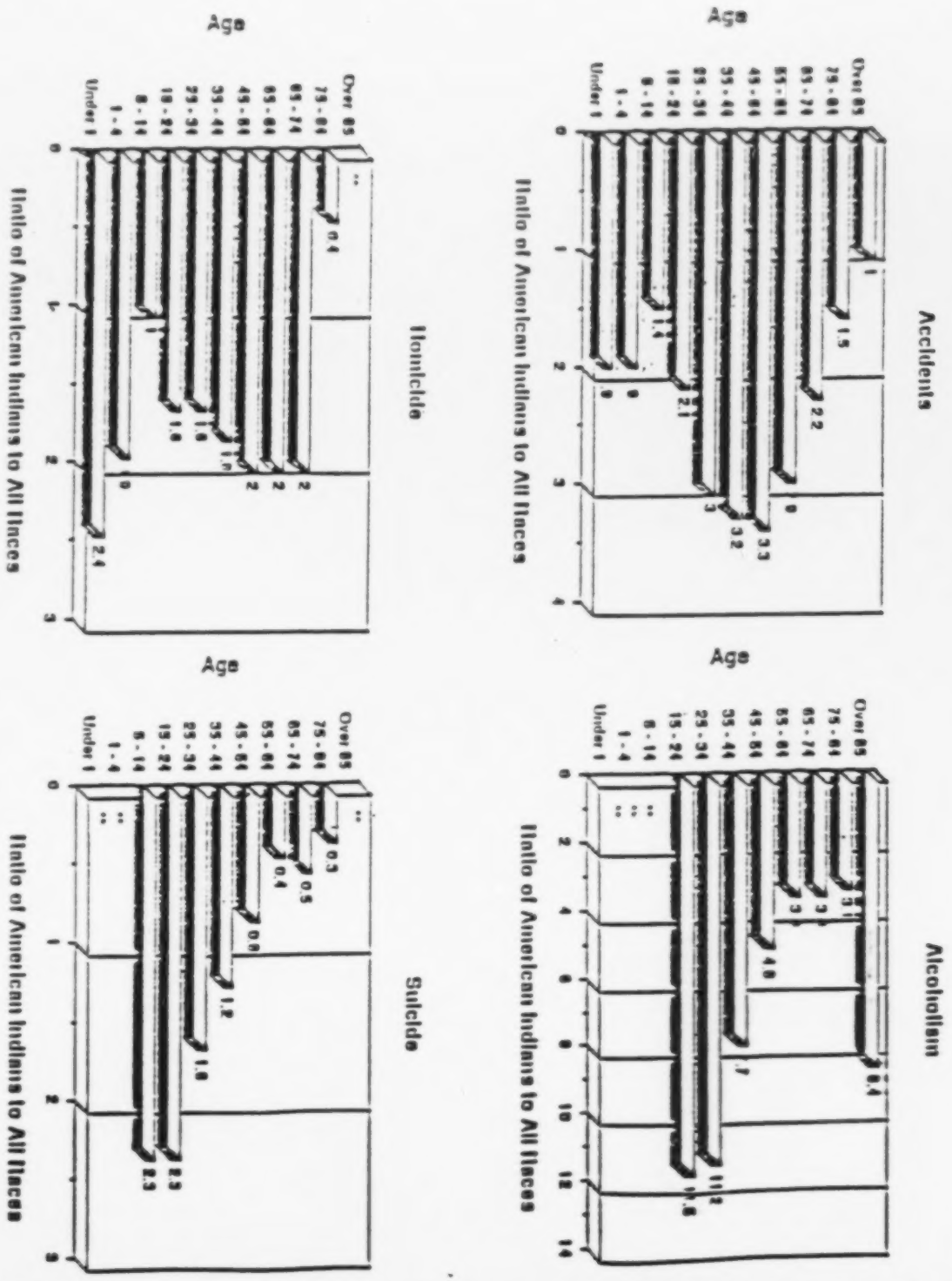
**Death Rates for Leading Causes as a Ratio of American Indians to All Races**




Source: O'Connell, J. C. (Ed.) (1987). A study of the special problems and needs of American Indians with handicaps both on and off the reservation. Washington, D.C., U.S. Department of Education, Rehabilitation Services Administration.

Figure 3

Major Causes of Death as a Ratio of American Indians to All Races




SOURCE: O'Connell, J.C. (Ed.) (1987). A Study of the special problems and needs of American Indians with handicaps both on and off the reservation. Washington, D.C. U.S. Department of Education. Rehabilitation Services Administration



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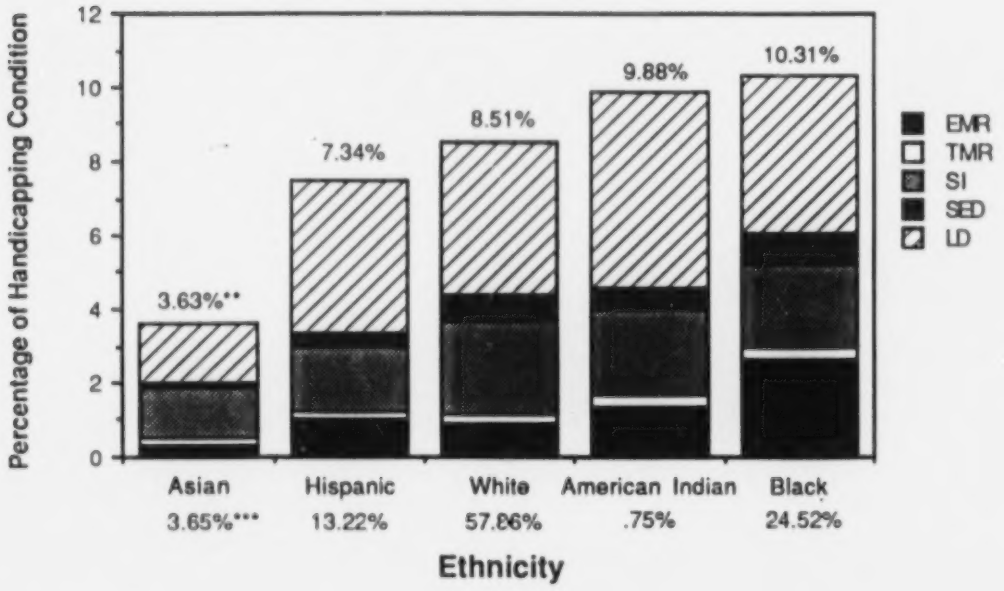
Figure 4

**Percentage of Special Education Population for 5 Ethnic Categories by Handicapping Condition**




**Total percentage handicapped by ethnic category
***Percentages of total survey group by ethnic category

Source: O'Connell, J. C. (Ed.) (1987). A study of the special problems and needs of American Indians with handicaps both on and off the reservation. Washington, DC. U.S. Department of Education, Rehabilitation Services Administration.

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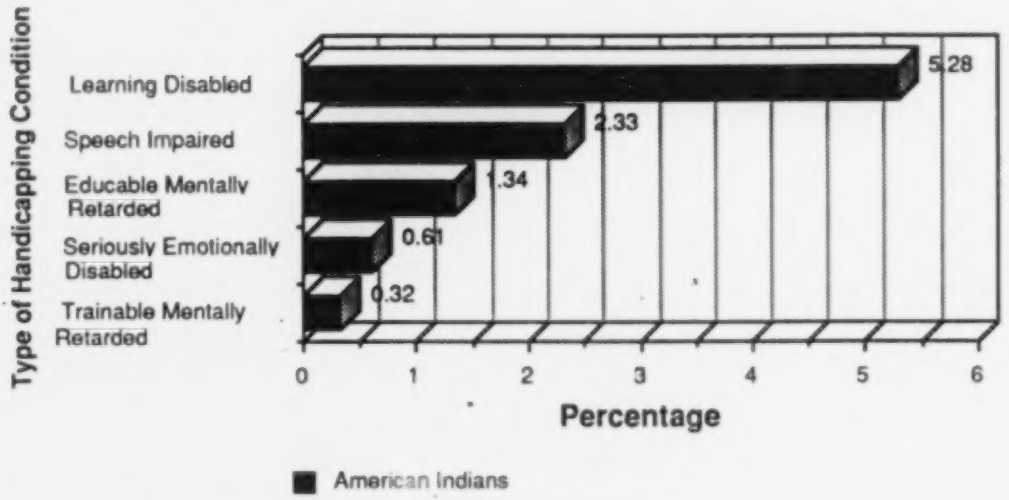
**Figure 5**

**Distribution of Handicapping Conditions Within American Indian Population**




Source: O'Connell, J. C. (Ed.) (1987). A study of the special problems and needs of American Indians with handicaps both on and off the reservation. Washington, DC. U.S. Department of Education, Rehabilitation Services Administration.

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